Amended claims of PCT Application No. IB03/01257

Claims

1. An isolated protein comprising an ENTH domain and having growth inhibiting activity wherein said protein has an amino acid sequence as set forth in Seq. Id. No. 5.

2. An isolated nucleic acid encoding a protein of claim 1.

3. A vector comprising a nucleic acid as defined in claim 2.

4. A host cell comprising a vector of claim 3.

5. The host cell of claim 4, wherein said cell is an eukaryotic cell.

6. A method for the identification of a hyperproliferative disease, in particular benign and malignant tumors, or a genetic predisposition thereof, which comprises detecting in a body fluid or a tissue sample of a subject a change in the expression level of an ELP protein and/or at least one mutation within a nucleic acid sequence encoding an ELP protein or detecting a rearrangement in the genomic *elp* locus.

7. The method of claim 6 wherein said mutation is located within the DNA region coding for the ENTH domain, in the 5' untranslated region, in a codon encoding an evolutionary conserved amino acid, in the promoter or in a splicing site.

8. The method of claim 6 or 7 wherein said mutation leads to a non-functional ELP protein, to a reduced protein expression or no protein, or a fusion protein.

9. The method of anyone of claims 6 to 8, wherein said nucleic acid sequence encoding an ELP protein is selected from Seq. Id. No. 1 or the nucleic acid sequence as defined in claim 2.

10. The method of anyone of claims 6 to 9, wherein the disease is lung cancer.

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11. The method of anyone of claims 6 to 9, wherein the disease is kidney cancer.

12. The method of anyone of claims 6 to 9, wherein the disease is stomach cancer.

13. A method for the production of an ELP protein comprising transformation of suitable host cells with a nucleic acid of claim 2 in an expression construct, cultivation of said cells under conditions allowing protein expression of said protein, and isolation of the produced proteins.

14. Use of an antibody capable of binding specifically to an epitope of an ELP protein in a method for the identification of a hyperproliferative disease or a genetic predisposition thereof.

15. Use of a nucleic acid encoding an ELP protein for the gene therapy of a hyperproliferative disease associated with ELP proteins, in particular the nucleic acid sequence set forth in Seq. Id. No. 1 or the nucleic acid sequence as defined in claim 2.

16. A pharmaceutical composition for the treatment of a hyperproliferative disease, in particular benign and malignant tumors, comprising an ELP protein and/or a nucleic acid sequence encoding an ELP protein, in particular a protein as set forth in Seq. Id. No. 2 or Seq. Id. No. 5 and a nucleic acid sequence as set forth in Seq. Id. No. 1 or as defined in claim 3.

17. The pharmaceutical composition of claim 16, wherein the hyperproliferative disease is lung cancer.

18. The pharmaceutical composition of claim 16, wherein the hyperproliferative disease is kidney cancer.

19. The pharmaceutical composition of claim 16, wherein the hyperproliferative disease is stomach cancer.

20. Use of an oligonucleotide which specifically hybridizes to a region of a mRNA encoding an ELP protein for the therapy of hypoproliferative diseases

and/or diseases characterized by incorrect cell differentiation.

21. The use of claim 20, wherein said oligonucleotide comprises chemical modifications.

22. Use of a double stranded RNA (dsRNA) for gene silencing wherein said RNA has a nucleotide sequence which is complementary to an exon region of a gene encoding an ELP protein.

23. The use of claim 22 wherein said RNA has a length of about 200-2000 base pairs, preferably 700-800 base pairs.

24. The use of claim 23 wherein said RNA has a length of about 18-25 base pairs, preferably 20-22 base pairs.

25. The use of claim 22, wherein said ELP protein is human ELP.